

Robert B. Greifinger, MD

During the mid-nineteenth century, the annual tuberculosis (TB) mortality in the penitentiaries at Auburn, New York, and in Boston and Philadelphia exceeded 10% of the inmate population.¹ One hundred years ago, Dr. Julius Ransome worked at Clinton Prison in Dannemora, New York. He wrote extensively and lobbied vigorously to improve health care for inmates. He held a view that excellent medical care for inmates served a public interest:

At first thought it may appear of small importance to the general public as to what is being done in the penal institutions...so long as the

prisoner is kept safely until the expiration of his sentence, not absolutely injured, or subjected to cruel or unusual punishment. A little reflection and investigation... will quickly convince

one that a prison population is essentially as much a part of the community as any other class. [The prisoner] is...subject to the laws of life, health and emotion. But this is not the only, nor is it the chief reason why society and the immediate community are...interested in the conduct of penal institutions and the welfare of their populations.

Penal populations are always tidal populations, with an outgoing as well as an incoming tide. It therefore means much more to the community as to what a man is when he comes out of prison, for he becomes a local factor in the social problem.... He then becomes either a menace, a real danger to the community to which he is discharged, or has within him the possibilities of becoming a useful citizen.

Disease is no respecter of persons. A prisoner can, with few exceptions, be discharged with a degree of health which will at least prevent his

becoming a menace and a burden to the community.... This is especially true of the disease which just at present is engaging the attention of the civilized world, namely, tuberculosis.²

Dr. Ransome provides an eloquent description of the inmate as a public health sentinel and of the period of incarceration as a time to use public health intervention for a direct public purpose. Despite this history, we have yet to realize the magnitude of the problem of TB in prisons and jails and the simple steps that can be taken to reduce it. While great strides have been made to improve personal medical services, we do not have an adequate public health infrastructure in our prisons and jails.

In 1994, more than one million people were under the jurisdiction of Federal or state correctional authorities, and another 500,000 were held in local jails.^{3,4} On December 31, 1993, almost 4.9 million people were under some form of correctional supervision, including probation and parole. The annual rate of increase has exceeded 8% since 1980 and has doubled per capita since that time.

Most inmates come from communities of concentrated poverty and urban social ills. They are more likely to be undereducated, HIV-infected, drug or alcohol abusers, and without essential medical services before incarceration. This large and growing group of inmates is at high risk for contracting TB.^{5,6}

We add to the problem when we crowd this group into institutions and—through frequent facility changes as they move through the criminal justice system—multiply their risk of exposure and ability to expose, all too often losing track of where they stand in terms of routine medical

follow-ups. But because they *are* captive, they should be available for clinical and public health interventions.

The Centers for Disease Control, among others, has been recommending admission chest X-rays for inmates in high prevalence communities.⁷ This makes sense and is consistent with what we know about the increase in the TB case rate during the past decade and its reflection in the increased prevalence of TB among inmates.⁸ Yet too many jurisdictions do not follow this advice,

Plus Ça Change...

TB control programs can greatly affect TB case rates.

especially local jail facilities that process large numbers of high risk inmates.

In the following article, Puisis and coworkers document the value of an admission chest X-ray for inmates in an urban jail.⁹ They describe a twofold improvement in case identification and a remarkable reduction from 17.6 to 2.3 days in the time between detection of symptoms and isolation. Each film is read quickly so that containment can be achieved. The approach works in Cook County, Illinois, and it works in New York, Pennsylvania, and other systems that pay attention to TB control.

Neither the high rate of anergy among inmates nor the success of the radiographic screening program should suggest abandonment of Mantoux PPD testing for TB infection. Albeit limited, PPD testing is valuable for preventing reactivation of TB disease and as an epidemiologic tool to aid in the detection of occult cases of TB. The method of high speed screening with 100-mm film is helpful in this particular jurisdiction with a high volume of 175 cases per day. The decision to use high speed equipment or less expensive and slower equipment is solely a financial one, dependent on volume. The objective is to identify and isolate suspects with minimal delay.

Chest X-ray alone is insufficient to control transmission of TB. A complete TB control program focuses both on containing suspect and active cases and on preventing reactivation, by means of:

- *Surveillance systems* to monitor changes in infection rates among inmates and staff, to track episodes of disease and possible transmission, and to promote coordination with local and state health departments.
- *Prevention efforts* including education, training, admission chest X-ray, mandatory annual testing, appropriate anergy testing, and directly observed prophylactic therapy.
- *Early detection* with timely diagnostics (including multiple smears, cultures, and drug resistance studies).
- *Treatment with appropriate medication.*
- *Firm and explicit containment policies* including respiratory isolation of suspect or confirmed cases while contagious, mandatory directly observed therapy, engineering controls, appropriate personal protective devices, and safe work practices.^{10,11,12}

We do not have an
adequate public health
infrastructure in our
prisons and jails.

TB control programs can greatly affect TB case rates. In New York, for example, the case rate for TB was reduced by 75% between 1991 and 1995 through such efforts (Unpublished data, Department of Correctional Services, State of New York).

Dr. Greifinger served as Chief Medical Officer for the New York Department of Correctional Services from 1989 to 1995. He is currently a consultant to the Pennsylvania

Department of Corrections and develops managed care quality improvement programs at IPRO, Lake Success, NY.

Address correspondence to Dr. Greifinger, 32 Parkway Drive, Dobbs Ferry, NY 10522; tel. 914-693-9205.

References

1. Dubos R. The white plague. New Brunswick (NJ): Rutgers University Press, 1992.
2. Ransome J. Tuberculosis work at Clinton Prison. Plattsburgh (NY): Clinton County Historical Museum, 1987.
3. Department of Justice [US]. Bureau of Justice statistics: prisoners in 1994. NCJ-151654. Washington DC: Department of Justice, 1995.
4. Department of Justice [US]. Bureau of Justice statistics: correctional populations in the United States, 1993. NCJ-156675. Washington DC: Department of Justice, 1995.
5. Friedman NL, Williams MT, Singh TP, Frieden TR. Tuberculosis, AIDS and death among substance abusers on welfare in New York City. *N Engl J Med* 1996;334:828-833.
6. Selwyn PA, Hartel D, Lewis VA, Schoenbaum EE, Vermund SH, Klein RS, et al. A prospective study of the risk of tuberculosis among intravenous drug users with human immunodeficiency virus infection. *N Engl J Med* 1989;320:545-550.
7. Division of Tuberculosis Elimination, Centers for Disease Control and Prevention [US]. Control of tuberculosis in correctional facilities. Atlanta (GA): CDC, 1995.
8. Hammett TM, Harrold L, Epstein J. Tuberculosis in correctional facilities. Washington DC: National Institute of Justice and Centers for Disease Control and Prevention, 1994.
9. Puisis M, Feinglass J, Lidow E, Mansour M. Radiographic screening for tuberculosis in a large urban jail. *Public Health Rep* 1996;111:330-334.
10. Bloch AB, Onorato IM, Ihle WW, Hadler JL, Hayden CH, Snider, DE Jr. The need for epidemic intelligence. *Public Health Rep* 1996;111:26-31.
11. Centers for Disease Control and Prevention [US]. Essential components of a tuberculosis prevention and control program and screening for tuberculosis and tuberculosis infection in high risk populations: recommendations of the Advisory Council for the Elimination of Tuberculosis. *MMWR* 1995;44(RR-11):1-34.
12. Centers for Disease Control and Prevention [US]. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care facilities, 1994. *MMWR* 1994;43(RR-13):1-132.